What Is Claimed Is:

1. A method of forming a non-oxide thin film, comprising:

introducing a work function reducing agent onto a surface of a sputter target facing into a substrate in a process chamber;

providing an inert gas into the process chamber;

ionizing the inert gas, thereby generating a plurality of electrons;

disintegrating a plurality of negatively charged ions from the sputter target; and

forming the non-oxide thin film on the substrate from the negatively charged ions reacted with the ionized oxygen gas.

2. The method according to claim 1, wherein the non-oxide thin film includes one of copper (Cu), silver (Ag), gold (Au), aluminum (Al), molybdenum (Mo), tungsten (W), Titanium (Ti), and Tantalum (Ta), Chromium (Cr), and diamond-like-carbon (DLC) thin film.

3. The method according to claim 1, wherein the work function reducing agent includes one of cesium, rubidium, potassium, sodium, and lithium.

4. The method according to claim 1, wherein the sputter target is applied with a voltage of one of straight DC, pulsed DC, and RF power supply.

5. The method according to claim 6, wherein the applied voltage to the sputter target is in the range of about 100 to 1000 volt.

6. The method according to claim 1, wherein the substrate is either grounded or biased with respect to the sputter target.

7. The method according to claim 1, wherein the substrate is maintained at a temperature in the range of about 25 to 500°C.

8. The method according to claim 1, wherein the process chamber has a process pressure in the range of about 10^{-4} to 10^{-2} Torr.

9. The method according to claim 1, further comprising confining the electrons in close proximity to the surface of the sputter target prior to disintegrating a plurality of negatively charged ions.

10. A method of forming an non-oxide thin film using a magnetron sputter system, comprising:

evacuating the process chamber to maintain a base pressure;

introducing a work function reducing agent onto a surface of a sputter target facing into the substrate;

providing an inert gas into the process chamber;

maintaining a process pressure of the process chamber;

ionizing the oxygen gas and the inert gas, thereby generating a plurality of electrons;

confining the electrons in close proximity to the surface of the sputter target;

disintegrating a plurality of negatively charged ions from the sputter target; and

forming the non-oxide thin film on the substrate from the negatively charged ions reacted with the ionized oxygen gas.

11. The method according to claim 12, wherein the non-oxide thin film includes one of copper (Cu), silver (Ag), gold (Au), aluminum (Al), molybdenum (Mo), tungsten (W), Titanium (Ti), and Tantalum (Ta), Chromium (Cr), and diamond-like-carbon (DLC) thin film.

12. The method according to claim 12, wherein the work function reducing agent includes one of cesium, rubidium, potassium, sodium, and lithium.

13. The method according to claim 12, wherein the sputter target is applied with a voltage of one of straight DC, pulsed DC, and RF power supply.

14. The method according to claim 17, wherein the applied voltage to the sputter target is in the range of about 100 to 1000 volt.

15. The method according to claim 12, wherein the substrate is either grounded or biased with respect to the sputter target.

16. The method according to claim 12, wherein the substrate is maintained at a temperature in the range of about 25 to 500°C.

17. The method according to claim 12, wherein the process pressure is in the range of about 10^{-4} to 10^{-2} Torr.